

Abstract of the Disclosure

A magnetic recording medium for thermally-assisted recording is a bilayer of a high-coercivity, high-anisotropy ferromagnetic material like FePt and a switching material like FeRh or Fe(RhM) (where M is Ir, Pt, Ru, Re or Os) that exhibits a switch from antiferromagnetic to ferromagnetic at a transition temperature less than the Curie temperature of the high-coercivity material. The high-coercivity recording layer and the switching layer are exchange coupled ferromagnetically when the switching layer is in its ferromagnetic state. To write data the bilayer medium is heated above the transition temperature of the switching layer. When the switching layer becomes ferromagnetic, the total magnetization of the bilayer is increased, and consequently the switching field required to reverse a magnetized bit is decreased without lowering the anisotropy of the recording layer. The magnetic bit pattern is recorded in both the recording layer and the switching layer. When the media is cooled to below the transition temperature of the switching layer, the switching layer becomes antiferromagnetic and the bit pattern remains in the high- anisotropy recording layer.